

Please amend Claims 1 and 4, to read as follows. A marked-up copy of the amended claims, showing the changes made thereto, is attached.

- Sub C1
1. (Twice Amended) A charge transfer apparatus comprising:
- a semiconductor region of one conductivity type;
  - a charge transfer region of a conductivity type opposite to the conductivity type of said semiconductor region that is formed in said semiconductor region and joined to said semiconductor region to form a diode, said diode having an impurity distribution which is uniform along a direction of signal charge transfer;
  - a signal charge input portion adapted to input a signal charge to the charge transfer region;
  - a signal charge output portion adapted to accumulate the signal charge transferred from the charge transfer region; and
  - a plurality of independent potential supply portions adapted to supply a potential gradient to said semiconductor region, said plurality of independent potential supply portions supplying said semiconductor region with respectively different potentials,
- wherein the signal charge in the charge transfer region is transferred by the potential gradient formed by said plurality of potential supply portions, and
- wherein the signal charge in said charge transfer region is transferred by drift over all of said charge transfer region.
- B1

- B2 Sub C1
4. (Amended) A charge transfer apparatus comprising:
- a semiconductor substrate of one conductivity type;